

Serial No.: 10/605,993
Confirmation No.: 2992
Applicants: PERSSON, Per *et al.*
Atty. Ref.: 07589.0075.NPUS01

THE CLAIMS:

1. (Currently amended) An apparatus for an internal combustion engine in which for each cylinder and associated piston, at least one inlet valve and at least one exhaust valve is provided for respectively controlling connection between a combustion chamber of the cylinder and an intake system and an exhaust system, ~~a rotatable camshaft and cam thereupon are configured to interact with first and second cam followers in order to switch between two different operating modes,~~ said apparatus comprising:

a pivotable rocker arm for selectively opening at least one of said valves;

a first cam follower fixedly mounted on said rocker arm and interacting with a rotating cam to pivot said rocker arm to open said at least one valve at a first rotational position of said cam;

~~the first and~~ a second cam follower[s] adjustably mounted on a pivot ~~said~~ rocker arm,
the second cam follower being hydraulically adjustable between two positions with respect to said rocker arm by means of a piston located in a hydraulic cylinder;

the hydraulic cylinder being connectable to a hydraulic fluid source via a hydraulic fluid duct; and

the piston being moveable from one position to another by action of a quantity of hydraulic fluid being delivered to the hydraulic cylinder.

2. (Original) The apparatus as recited in claim 1, further comprising:

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a control valve and a non-return valve being connected between the hydraulic fluid source and the hydraulic cylinder.

3. (Original) The apparatus as recited in claim 2, wherein the control valve is actuatable by switching between two pressure levels in a hydraulic circuit connected to the hydraulic fluid source.

4. (Original) The apparatus as recited in claim 1, the piston is fitted in a double-acting piston cylinder.

5. (Original) The apparatus as recited in claim 4, further comprising:

the control valve in one control position connects the hydraulic fluid source to one side of the piston via the non-return valve, and another side of the piston is connected to a drainage port for hydraulic fluid, and

the non-return valve configured to shut off flow towards the hydraulic fluid source.

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6. (Currently amended) An apparatus for controlling the activity of inlet and exhaust ~~pistons~~ valves that cooperate with inlet and exhaust ports, respectively, of an internal combustion engine, the apparatus comprising:

a rotatable cam having at least one cam lobe, the rotatable cam being configured to be positioned relative to first and second cam followers so that a revolution of the rotatable cam causes the cam lobe to actuate either one or both of the first and second cam followers ~~for the purpose of instituting two in accordance with~~ different operational modes of ~~an including said~~ internal combustion engine;

the first cam follower being stationarily mounted to, ~~and stationarily oriented with~~ respect to a ~~pivotal~~ pivotable rocker arm;

the second cam follower being movably mounted to, ~~and moveably oriented with respect~~ to the ~~pivotal~~ said rocker arm; and

[an] a hydraulic controller interconnecting the ~~first and~~ second cam follower and the rocker arm for varying the relative position thereof therebetween.

7. (New) Apparatus for controlling the operation of a valve of a combustion chamber of an internal combustion engine, comprising:

a pivotable rocker arm coupled to said valve, said rocker arm including

a first cam follower interacting with a lobe of a rotating cam at a first rotational position of said cam to cause said rocker arm to pivot and thereby open said valve;

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a second cam follower selectively interacting with said lobe of said rotating cam at a second rotational position of said cam to cause said rocker arm to pivot and thereby open said valve, said second cam follower being adjustably mounted to said rocker arm and movable between two operational positions by selective action of a hydraulic piston, wherein said second cam follower interacts with said lobe at a first operational position thereof with respect to said rocker arm, and has no interaction with said lobe at a second operational position thereof with respect to said rocker arm.